



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,708	03/12/2002	Takayuki Toyoshima	13630-004US1	2620

26161 7590 10/07/2003

FISH & RICHARDSON PC
225 FRANKLIN ST
BOSTON, MA 02110

EXAMINER

AMARI, ALESSANDRO V

ART UNIT	PAPER NUMBER
----------	--------------

2872

DATE MAILED: 10/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/070,708

Applicant(s)

TOYOSHIMA ET AL.

Examiner

Alessandro V. Amari

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-13 is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☒ Claim(s) 9 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 14 July 2000 and 13 September 2000. It is noted, however, that applicant has not filed certified copies of the copies of Japan 2000-214379 and Japan 2000-278268 applications as required by 35 U.S.C. 119(b).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scobey et al US Patent 6,115,401.

In regard to claim 1, Scobey et al discloses (see Figure 8) an optical element having wavelength selectivity comprising a lens array (128, 138) having a plurality of lenses and a multi-layered film filter (122) and includes high refractive-index dielectric layers and low refractive-index dielectric layers laminated alternately and whose film thickness continuously changes in accordance with positions of the individual lenses as shown in Figure 8 and as described in column 14, lines 19-67 and column 15, lines 1-20. Regarding claim 2, Scobey et al teaches that the plurality of lenses are aligned in a line as shown in Figure 8 and that the film thickness of the multi-layered film filter linearly changes from the first end of the plurality of lenses to the second end as

Art Unit: 2872

described in column 14, lines 43-46. Regarding claim 6, Scobey et al discloses (see Figure 8) a light emitting device (129, 139, 149, 159, 169, 179, 189, 199) for emitting light toward the multi-layered film filter via individual lenses of the lens array as shown in Figure 8. Regarding claim 8, Scobey et al discloses that the light emitting device includes a plurality of light sources (129, 139, 149, 159, 169, 179, 189, 199) provided in association with individual lenses of the lens array as described in column 15, lines 11-14 and as shown in Figure 8.

However, Scobey et al does not teach that the multi-layered film filter is formed on an end face of the lens array or that the array has a second end face facing the first end face and regarding claim 7, Scobey et al does not teach that the light emitting device is integral with the lens array.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have the film filter formed integrally with the lens array, since it has been held that making in one piece an article which has formerly been formed in multiple pieces involves only routine skill in the art. One would have been motivated to form the film filter integral with the lens array in order to reduce stray reflections so as to achieve an overall improvement in optical coupling. *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965)

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scobey et al US Patent 6,115,401 in view of Liu US Patent 6,054,703.

Regarding claim 3, Scobey et al teaches the invention as set forth above but does not teach that the lens array is a rod lens array including a plurality of rod lenses.

Liu does teach that the lens array is a rod lens array including a plurality of rod lenses as shown in Figure 3 and as described in column 6, lines 9-11.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the rod lenses as taught by Liu in the optical element of Scobey et al in order to for improved collimation of light.

5. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scobey et al US Patent 6,115,401 in view of Bergmann et al US Patent 6,064,522.

Regarding claims 4 and 5, Scobey et al teaches the invention as set forth above but does not teach that the lens array is a gradient index planar microlens including a single substrate and a plurality of microlenses formed in a line on the substrate and that the plurality of microlenses protrude from the substrate.

Regarding claims 4 and 5, Bergmann et al teaches (see Figures 1 and 6A-6D) that the lens array is a gradient index planar microlens (20, 620b, 720b, 920b) as described in column 3, lines 34-39 including a single substrate and a plurality of microlenses formed in a line on the substrate as shown in Figures 6A-6D and that the plurality of microlenses protrude from the substrate as shown in Figures 6A-6D.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the gradient index planar lenses as taught by Bergmann et al in the optical element of Scobey et al in order to for improved collimation of light.

Allowable Subject Matter

6. Claims 11-13 are allowed.

Art Unit: 2872

7. Claims 9 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Claim 9 is allowable over the prior art for at least the reason that the prior art fails to teach or reasonably suggest, "the optical element further has a plurality of light receiving elements formed on the second face" as set forth in the claimed combination. Claim 10 is allowable based upon its dependence on claim 9.

Claim 11 is allowable over the prior art for at least the reason that the prior art fails to teach or reasonably suggest, "a step of directly forming a multi-layered film filter on the first end face of the lens array by a physical vapor deposition method" as set forth in the claimed combination.

The prior art of record, Scobey et al, Liu and Bergmann et al teach an optical element having wavelength selectivity comprising a lens array and a multi-layered film filter formed on the lens array where the lens array is a rod lens or gradient index planar microlens and that the optical element further has a plurality of light sources provided in association with the lens array. However, the prior art does not teach that the optical element further has a plurality of light receiving elements formed on a second face of the lens array nor does it teach the claimed method of manufacturing the optical element and there is no motivation or teaching to modify this difference as derived.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Goodman US Patent 6,542,306 teaches an optical element

Art Unit: 2872

having wavelength selectivity comprising a lens array and a multilayered film layer as shown in Figure 1 and as described in column 8, lines 54-65 and column 11, lines 30-44.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alessandro V. Amari whose telephone number is (703) 306-0533. The examiner can normally be reached on Monday-Friday 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (703) 305-0024. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

ava *ava*
25 September 2003


MARK A. ROBINSON
PRIMARY EXAMINER